

I claim:

1. An accelerator tube assembly for use in a hydraulic food product cutting system which comprises:

an accelerator tube housing having an inlet end, an outlet end, and an inside surface, and configured to receive an accelerator tube in spaced relationship to said inside surface, said accelerator tube housing having an inlet sealing ring and an outlet sealing ring;

a frustoconical shaped tube defining a passageway there-through for the passage of a suspension of food products in a fluid from a larger inlet end to a smaller outlet end, said conical shaped tube formed of a flexible material having a durometer hardness within the range of twenty to seventy;

an inlet flange having first and second inlet flange surfaces, attached to and circumvolving said conical tube near said inlet end at a point wherein said first flange surface will be in sealable engagement with said accelerator tube housing inlet sealing ring, said inlet flange formed of a flexible material having a durometer hardness within the range of twenty to seventy; and

an outlet flange having first and second outlet flange surfaces, attached to and circumvolving said conical tube near said outlet end at a point wherein said first outlet flange surface will be in sealable engagement with said accelerator tube housing outlet sealing ring, said outlet flange formed of a flexible material having a durometer hardness within the range of twenty to seventy.

2. The accelerator tube assembly of Claim 1 wherein said flexible material that said frustoconical shaped tube is formed of rubber.
3. The accelerator tube assembly of Claim 1 wherein said rubber material that said frustoconical shaped tube is formed of polyurethane rubber.
4. The accelerator tube assembly of Claim 1 wherein said flexible material that said inlet flange is formed of is rubber.
5. The accelerator tube assembly of Claim 1 wherein said rubber material that said inlet flange is formed of is polyurethane rubber.
6. The accelerator tube assembly of Claim 1 wherein said flexible material that said outlet flange is formed of is rubber.
7. The accelerator tube assembly of Claim 1 wherein said rubber material that said outlet flange is formed of is polyurethane rubber.
8. The accelerator tube assembly of Claim 1 which further comprises a plurality of reinforcing ribs attached to the outside surface of said conical tube, said reinforcing ribs formed of a flexible material having a durometer hardness within the range of twenty to seventy.
9. The accelerator tube assembly of Claim 8 wherein said flexible material that said reinforcing ribs are formed of is rubber.
10. The accelerator tube assembly of Claim 8 wherein said rubber material that said reinforcing ribs are formed of is polyurethane rubber.

12. The accelerator tube assembly of Claim 8 wherein said plurality of reinforcing ribs are configured as rings attached to and circumvolving the outer surface of said frustoconical shaped tube.
13. The accelerator tube assembly of Claim 12 wherein said plurality of reinforcing rings are configured to engage the inner surface of said housing at a predetermined amount of deflection of said conical tube.
14. The accelerator tube assembly of Claim 8 wherein said plurality of reinforcing ribs are configured as a plurality of radially extending ribs attached to the outer surface of said frustoconical shaped tube.
15. The accelerator tube assembly of Claim 14 wherein said plurality of radially extending ribs are configured to engage the inner surface of said housing at a predetermined amount of deflection of said conical tube.
16. The accelerator tube assembly of Claim 1 wherein said accelerator tube housing further includes an access door for insertion and removal of said conical tube.
17. The accelerator tube assembly of Claim 1 wherein said accelerator tube housing further a pair of closeable housing halves.

18. An accelerator tube for use within an accelerator tube housing having an inlet end, an outlet end and an inside surface, and configured to receive in spaced relationship an accelerator tube, said accelerator tube, said accelerator tube housing having an inlet sealing ring and an outlet sealing ring, said accelerator tube comprising:

a frustoconical shaped tube defining a passageway there-through for the passage of a suspension of food products in a fluid from a larger inlet end to a smaller outlet end, said conical shaped tube formed of a flexible material having a durometer hardness within the range of twenty to seventy;

an inlet flange having first and second inlet flange surfaces, attached to and circumvolving said conical tube near said inlet end at a point wherein said first flange surface will be in sealable engagement with said accelerator tube housing inlet sealing ring, said inlet flange formed of a flexible material having a durometer hardness within the range of twenty to seventy; and

an outlet flange having first and second outlet flange surfaces, attached to and circumvolving said conical tube near said outlet end at a point wherein said first outlet flange surface will be in sealable engagement with said accelerator tube housing outlet sealing ring, said outlet flange formed of a flexible material having a durometer hardness within the range of twenty to seventy.

19. The accelerator tube assembly of Claim 18 wherein said flexible material that said frustoconical shaped tube is formed of rubber.

20. The accelerator tube assembly of Claim 18 wherein said rubber material that said frustoconical shaped tube is formed of polyurethane rubber.
21. The accelerator tube assembly of Claim 18 wherein said flexible material that said inlet flange is formed of is rubber.
22. The accelerator tube assembly of Claim 18 wherein said rubber material that said inlet flange is formed of is polyurethane rubber.
23. The accelerator tube assembly of Claim 18 wherein said flexible material that said outlet flange is formed of is rubber.
24. The accelerator tube assembly of Claim 18 wherein said rubber material that said outlet flange is formed of is polyurethane rubber.
25. The accelerator tube assembly of Claim 18 which further comprises a plurality of reinforcing ribs attached to the outside surface of said conical tube, said reinforcing ribs formed of a flexible material having a durometer hardness within the range of twenty to seventy.
26. The accelerator tube assembly of Claim 25 wherein said flexible material that said reinforcing ribs are formed of is rubber.
26. The accelerator tube assembly of Claim 25 wherein said rubber material that said reinforcing ribs are formed of is polyurethane rubber.
27. The accelerator tube assembly of Claim 25 wherein said plurality of reinforcing ribs are configured as rings attached to and circumvolving the outer surface of said frustoconical shaped tube.

28. The accelerator tube assembly of Claim 27 wherein said plurality of reinforcing rings are configured to engage the inner surface of said housing at a predetermined amount of deflection of said conical tube.

29. The accelerator tube assembly of Claim 27 wherein said plurality of reinforcing ribs are configured as a plurality of radially extending ribs attached to the outer surface of said frustoconical shaped tube.

30. The accelerator tube assembly of Claim 29 wherein said plurality of radially extending ribs are configured to engage the inner surface of said housing at a predetermined amount of deflection of said conical tube.